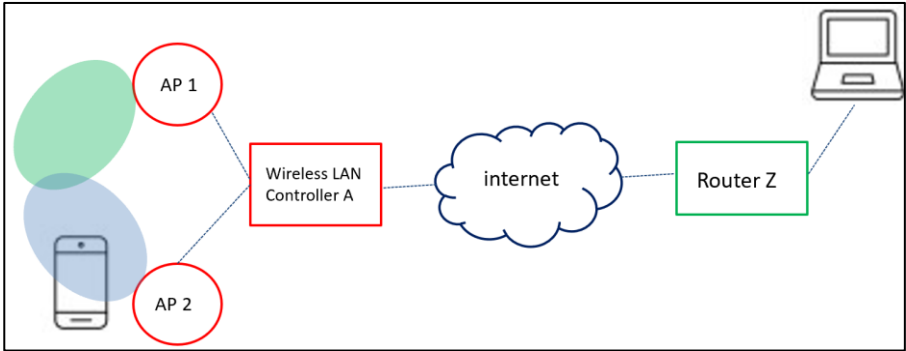
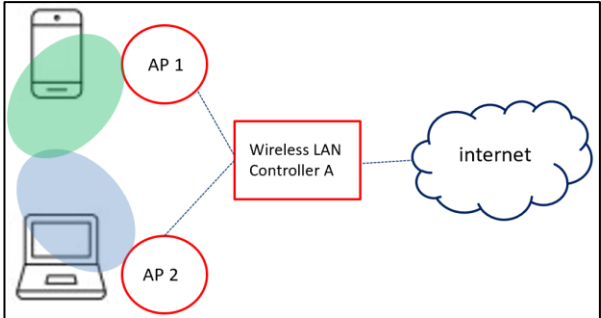


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## **EXHIBIT F**

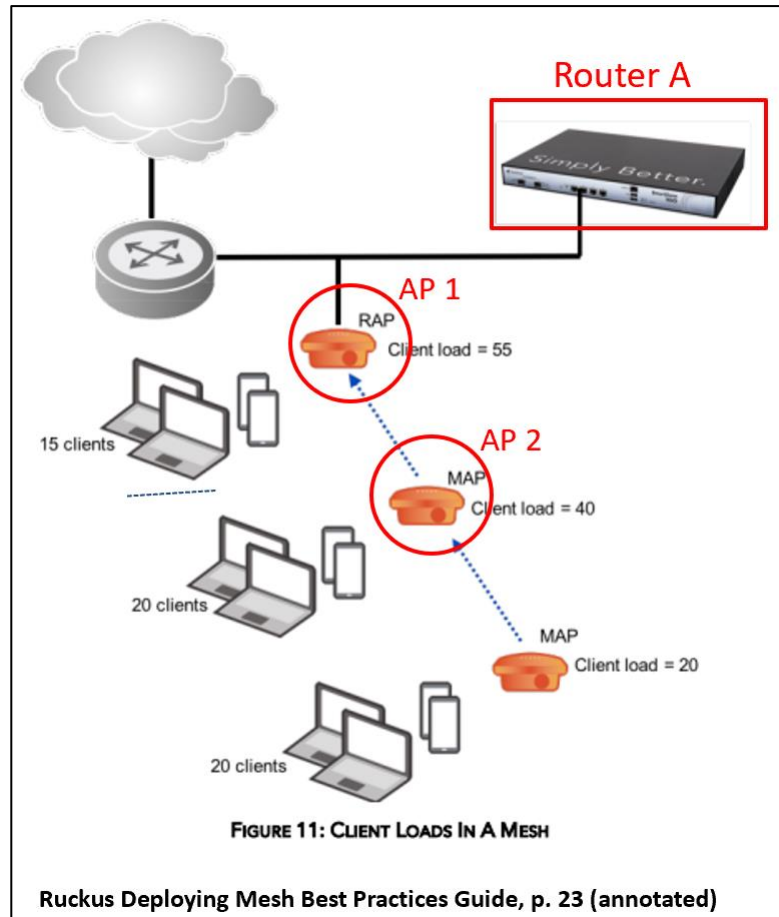
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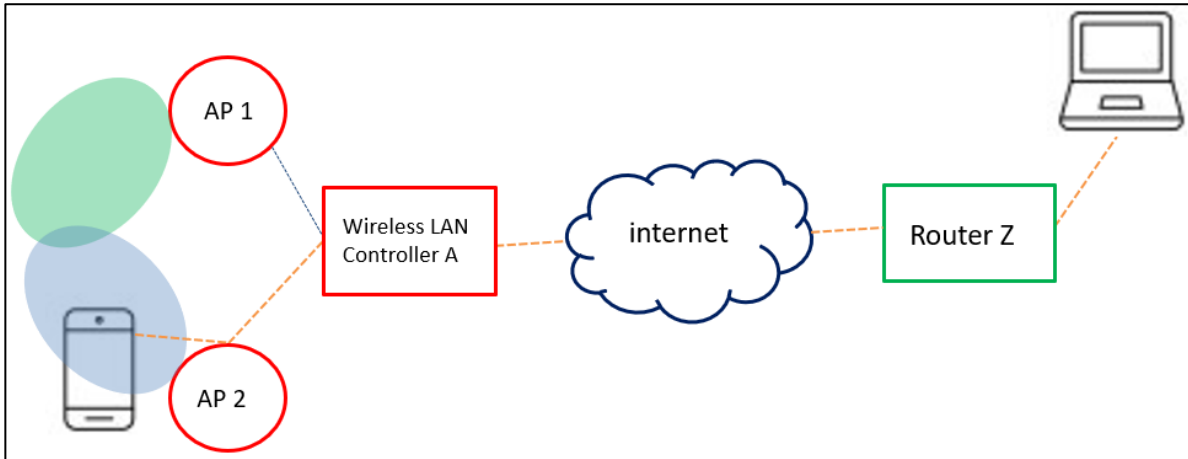
Claim 1	
<p><b>1[pre] A method for transmitting information in a communication system with at least two communicating devices, comprising:</b></p>	<p><b>Ruckus provides devices that perform a method for transmitting information in a communication system with at least two communicating devices. Those devices include, for example, access points (e.g., AP 1 and AP 2), Wi-Fi extenders, routers, and wireless LAN controllers (e.g., Wireless LAN Controller A) (“Ruckus Devices”). Those devices perform a method for transmitting information in a communication system with at least two communicating devices (e.g., a mobile phone a laptop engaged in a VoIP call).</b></p> <p><b>The communicating devices can be on different network as shown in the example below.</b></p>  <p><b>The communicating devices can also be on the same network as shown in the example below.</b></p> 

**Claim 1**

1[pre] A method for transmitting information in a communication system with at least two communicating devices, comprising:

An example network that corresponds to the left-hand side of the graphics on the previous slide is shown in the excerpt below of a Ruckus's access points arranged in a mesh network.

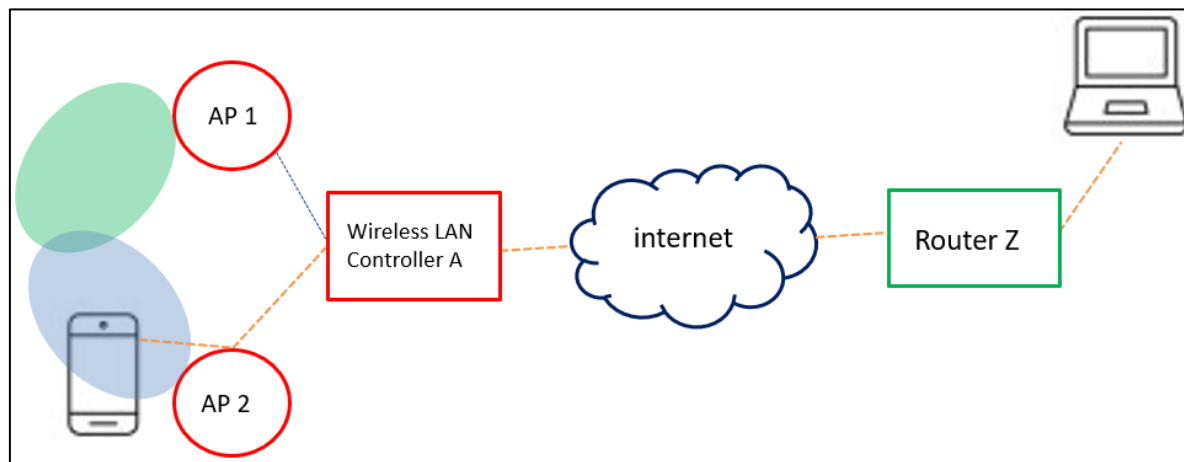


Claim 1	
<p>1[a] linking the at least two communicating devices for transmission of the information at least via a radio communication interface of a radio communication system having base stations interlinked via a base station network, said linking using channels arranged in hierarchical protocol layers;</p>	<p>The Ruckus Devices perform the step of linking the at least two communicating devices for transmission of the information at least via a radio communication interface of a radio communication system having base stations interlinked via a base station network, said linking using channels arranged in hierarchical protocol layers.</p> <p>For example, the Access Points (AP 1, AP 2) and Wireless LAN Controller A (e.g., a Zone Director product), collectively and separately perform the step of linking the at least two communicating devices (the phone and laptop) for transmission of the information by providing the connections shown below. That linking is done via the radio communication interface (e.g., the Wi-Fi interface) of a radio communications system having base stations (e.g., AP 1 and AP 2) of a base-station network (e.g., the network of Wireless LAN Controller A, AP 1, and AP 2).</p> <p>And that linking occurs using channels arranged in hierarchical protocol layers, for example, layers 1 and 2 as explained on the next slide.</p>  <pre> graph LR     Phone((Phone)) -.- AP2((AP 2))     AP2 -.- WLC[Wireless LAN Controller A]     AP1((AP 1)) -.- WLC     WLC -.- Internet((internet))     Internet -.- RouterZ[Router Z]     RouterZ -.- Laptop((Laptop))     </pre>

# **Claim 1**

**1[a] linking the at least two communicating devices for transmission of the information at least via a radio communication interface of a radio communication system having base stations interlinked via a base station network, said linking using channels arranged in hierarchical protocol layers;**

**The end-to-end link of the two communication devices, shown for example in the yellow dashed line below. Each component in the chain operates to link the two communication devices.**

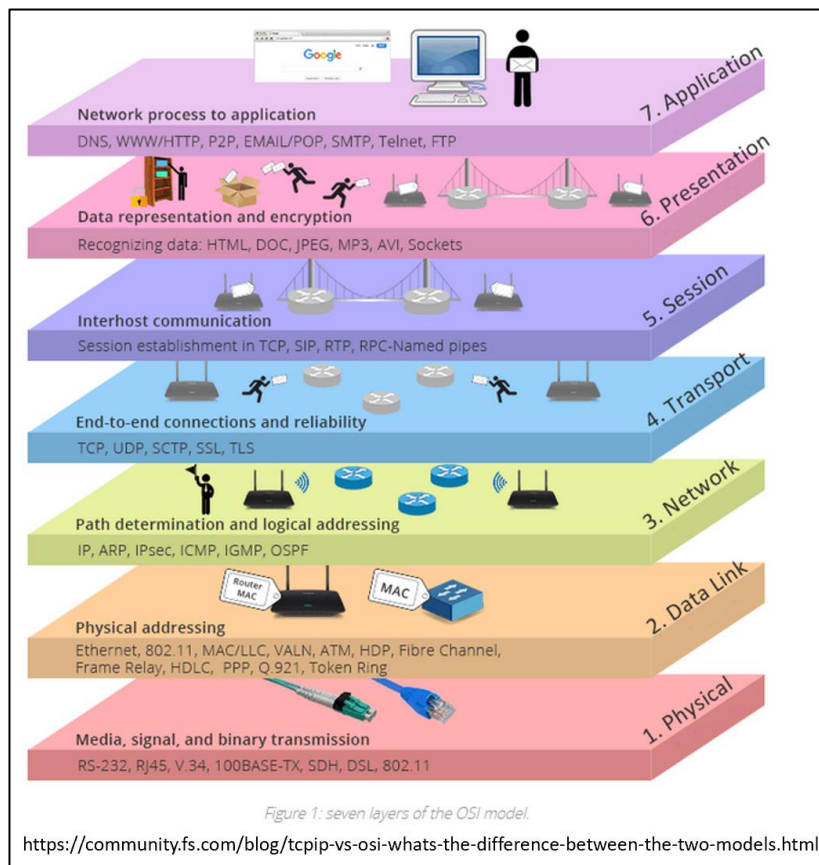


**The linking of the mobile phone and laptop shown above uses channels arranged in hierarchical protocol layers. The overall link above uses at least seven hierarchical protocol layers as considered from the perspective of OSI layer definitions, an example of which is shown on the next slide.**

**Claim 1**

1[a] linking the at least two communicating devices for transmission of the information at least via a radio communication interface of a radio communication system having base stations interlinked via a base station network, said linking using channels arranged in hierarchical protocol layers;

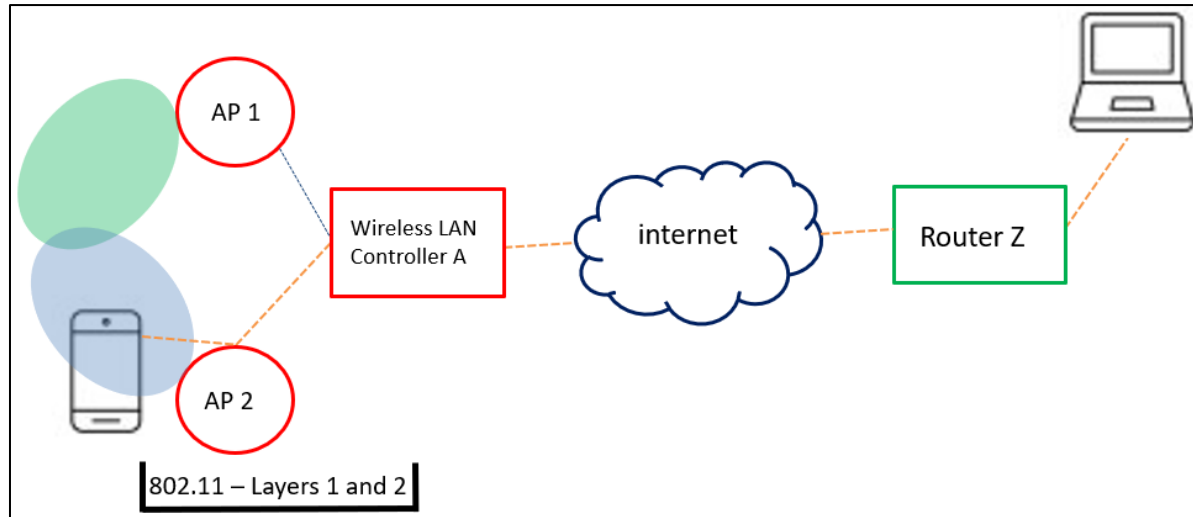
The OSI layer definitions are shown in the example below. Access points, Wi-Fi extenders/repeaters, routers, and wireless LAN controllers that use Wi-Fi (802.11) operate in layers 1 and 2.



**Claim 1**

1[a] linking the at least two communicating devices for transmission of the information at least via a radio communication interface of a radio communication system having base stations interlinked via a base station network, said linking using channels arranged in hierarchical protocol layers;

The graphic below is annotated to show that the linking performed by the APs and Wireless LAN Controller A that occurs in layers 1 and 2.



Claim 1	
<p><b>1[b] supplying channel-specific information, at least from one channel for a radio link between one of the communicating devices and at least one base station, to a hierarchically higher Internet protocol based channel for an overall link between the at least two communicating devices; and</b></p>	<p><b>The APs supply channel specific information, at least from one channel for a radio link between one of the communicating devices and at least one base station, to a hierarchically higher Internet protocol based channel for an overall link between the at least two communicating devices.</b></p> <p><b>For example, the APs supply channel-specific information in the form of WLAN radio measurements, that are from at least one channel for the radio link between the communication device, e.g., the mobile phone, and the base station, e.g., AP 1.</b></p> <div data-bbox="465 536 1798 1019" style="border: 1px solid black; padding: 10px;"> <p><b>5.2.7 Wireless LAN Radio Measurements</b></p> <p>Wireless LAN (WLAN) Radio Measurements enable STAs to understand the radio environment in which they exist. WLAN Radio Measurements enable STAs to observe and gather data on radio link performance and on the radio environment. A STA may choose to make measurements locally, request a measurement from another STA, or may be requested by another STA to make one or more measurements and return the results. Radio Measurement data is made available to STA management and upper protocol layers where it may be used for a range of applications. The measurements enable adjustment of STA operation to better suit the radio environment. The Radio Resource Measurement service includes measurements that extends the capability, reliability, and maintainability of WLANs by providing standard measurements across vendors, and provides the resulting measurement data to upper layers in the communications stack.</p> <p><b>IEEE 802.11k (2008) – Section 5.2.7</b></p> </div>



Claim 1	
<p>1[b] supplying channel-specific information, at least from one channel for a radio link between one of the communicating devices and at least one base station, to a hierarchically higher Internet protocol based channel for an overall link between the at least two communicating devices; and</p>	<p>A variety of WLAN Radio measurements can be supplied as illustrated by the examples below.</p> <div data-bbox="488 337 1244 908" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>The request/report measurements are as follows:</p> <ul style="list-style-type: none"> <li>— Beacon</li> <li>— Frame</li> <li>— Channel Load</li> <li>— Noise Histogram</li> <li>— STA Statistics</li> <li>— Location Configuration Information (LCI)</li> <li>— Neighbor Report</li> <li>— Link Measurement</li> <li>— Transmit Stream/Category Measurement</li> </ul> <p>IEEE 802.11k (2008) – Section 5.2.7</p> </div>

Claim 1	
<p><b>1[b] supplying channel-specific information, at least from one channel for a radio link between one of the communicating devices and at least one base station, to a hierarchically higher Internet protocol based channel for an overall link between the at least two communicating devices; and</b></p>	<p><b>The radio measurement data such “is made available to ... upper protocol layers where it may be used for a range of applications.” As explained above, the radio measurement data is sent on layers 2 and below. The upper protocol layers include layers 3-7, which include Internet protocol based channels as shown in the slide 5. That information is supplied to the hierarchically higher Internet protocol based channel for the overall link between the two communication devices. For example, as explained in the excerpt below, “there are applications that require quantifiable radio environment measurements in order to attain the necessary performance levels. These applications include VoIP, video over IP, location based applications as well as applications requiring mitigation of harsh radio environments.”</b></p> <div data-bbox="483 588 1344 1253" style="border: 1px solid black; padding: 10px;"> <p><b>5.2.7 Wireless LAN Radio Measurements</b></p> <p>Wireless LAN (WLAN) Radio Measurements enable STAs to understand the radio environment in which they exist. WLAN Radio Measurements enable STAs to observe and gather data on radio link performance and on the radio environment. A STA may choose to make measurements locally, request a measurement from another STA, or may be requested by another STA to make one or more measurements and return the results. Radio Measurement data is made available to STA management and upper protocol layers where it may be used for a range of applications. The measurements enable adjustment of STA operation to better suit the radio environment. The Radio Resource Measurement service includes measurements that extends the capability, reliability, and maintainability of WLANs by providing standard measurements across vendors, and provides the resulting measurement data to upper layers in the communications stack.</p> <p>In addition to featuring standard measurements and delivering measurement information to upper layers, there are applications that require quantifiable radio environment measurements in order to attain the necessary performance levels. These applications include VoIP, video over IP, location based applications, as well as applications requiring mitigation of harsh radio environments (multifamily dwellings, airplanes, factories, municipalities, etc.). Radio Measurements address most of the existing issues in using unlicensed radio spectrum to meet the requirements of these emerging technologies.</p> <p>To address the mobility requirements of technologies, such as VoIP and video streaming, Radio Measurements, such as Channel Load request/report and the Neighbor request/report, may be used to collect pre-handoff information, which can drastically speed up handoffs between cells within the same ESS. By accessing and using this information, the STAs (either in the APs or in the individual devices) can make intelligent decisions about the most effective way to utilize the available spectrum, power, and bandwidth for its desired communications.</p> <p><b>IEEE 802.11k (2008) – Section 5.2.7</b></p> </div>

Claim 1	
<p>1[c] initiating at least one of a changeover in respect of at least one multiple access medium and a handover based on the channel-specific information supplied from the channel for the radio link to the hierarchically higher Internet protocol based channel for the overall link.</p>	<p>The AP, for example, initiates a handover based on the channel-specific information supplied from the channel for the radio link to the hierarchically higher Internet protocol based channel for the overall link. For example, the measurement data provided by the AP can be a neighbor report that is used to determine potential roaming candidates, e.g., different APs for the device to be handed-off to. When an AP provides a neighbor report that results in an end-user device roaming to a different AP, a handover is initiated on the basis of that neighbor report.</p> <div data-bbox="490 558 1723 868" style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <p><b>5.2.7.9 Neighbor report</b></p> <p>The neighbor report request is sent to an AP, which returns a neighbor report containing information about known neighbor APs that are candidates for a service set transition. Neighbor reports contain information from the table dot11RRMNeighborReportTable in the MIB concerning neighbor APs. This request/report pair enables a STA to gain information about the neighbors of the associated AP to be used as potential roaming candidates.</p> <p><b>IEEE 802.11k (2008) – Section 5.2.7.9</b></p> </div>

**Claim 1**

1[c] initiating at least one of a changeover in respect of at least one multiple access medium and a handover based on the channel-specific information supplied from the channel for the radio link to the hierarchically higher Internet protocol based channel for the overall link.

A neighbor report includes channel specific information “about the neighbors of the associated AP to be used as potential roaming candidates.”

**5.2.7.9 Neighbor report**

The neighbor report request is sent to an AP, which returns a neighbor report containing information about known neighbor APs that are candidates for a service set transition. Neighbor reports contain information from the table dot11RRMNeighborReportTable in the MIB concerning neighbor APs. This request/report pair enables a STA to gain information about the neighbors of the associated AP to be used as potential roaming candidates.

IEEE 802.11k (2008) – Section 5.2.7.9

The channel specific information in a neighbor report is summarized in Section 7.3.2.37 of IEEE 802.11k, an excerpt of which is reproduced below.

**7.3.2.37 Neighbor Report element**

The format of the Neighbor Report element is shown in Figure 7-95b.

Element ID	Length	BSSID	BSSID Information	Regulatory Class	Channel Number	PHY Type	Optional Sub-elements
Octets:	1	1	6	4	1	1	variable

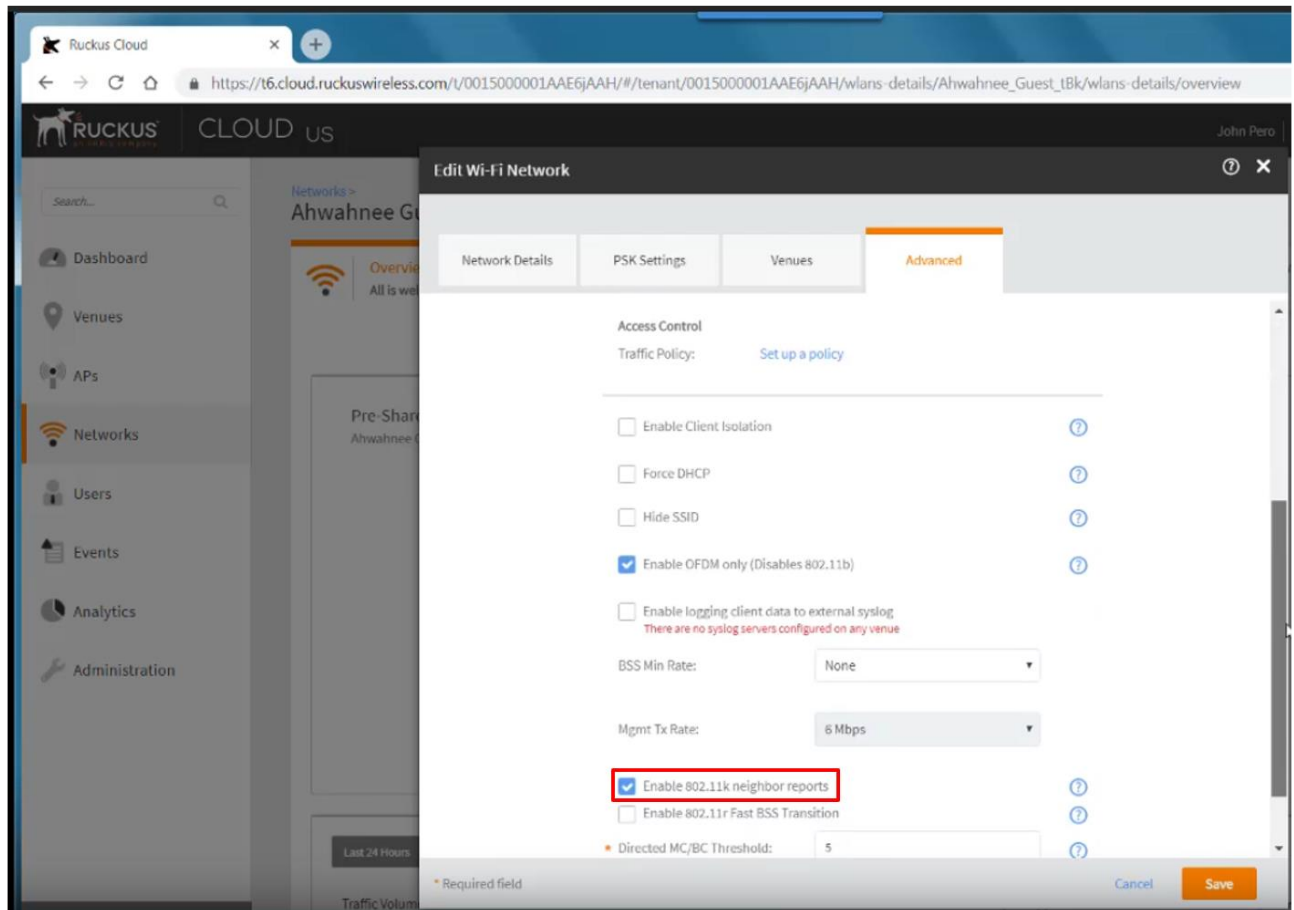
Figure 7-95b—Neighbor Report element format

IEEE 802.11k (2008) – Section 7.3.2.37

## Claim 1

1[c] initiating at least one of a changeover in respect of at least one multiple access medium and a handover based on the channel-specific information supplied from the channel for the radio link to the hierarchically higher Internet protocol based channel for the overall link.

The screenshot below from the Ruckus Cloud application confirms that Ruckus's networking equipment such as its APs and routers can support 802.11k reports.



<https://www.youtube.com/watch?v=dMD3Dqe94Xo>

**Claim 1**

1[c] initiating at least one of a changeover in respect of at least one multiple access medium and a handover based on the channel-specific information supplied from the channel for the radio link to the hierarchically higher Internet protocol based channel for the overall link.

The screenshot below from the Ruckus Cloud application further confirms the AP roaming functionality discuss in the prior slides.

Enhances roaming by providing a list of neighbor APs to the client device. APs build a neighbor AP list via background scanning, and when the client plans to roam, it will request this list from the AP. This list is then used to perform efficient scanning to find a roaming candidate.

<https://www.youtube.com/watch?v=dMD3Dqe94Xo>